EASTERN RESEARCH GROUP, INC.

MEMORANDUM

TO: Bill Maxwell, U.S. Environmental Protection Agency, OAQPS (MD-13)

FROM: Mary Lalley, ERG/MOR

DATE: July 31, 1997

SUBJECT: Final Summary of July 24, 1997 Meeting of the ICCR Process Heater Work Group

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1.0 PURPOSE

The purpose of the meeting was to allow meeting attendees to discuss various activities of the ICCR Process Heater Work Group. Topics of discussion included responding to suggestions from the Coordinating Committee, database review, non-gas-fired process heaters, progress tracking and future meetings.

2.0 LOCATION AND DATE

The meeting was held on July 24, 1997 in Long Beach, California.

3.0 MEETING ATTENDEES

Meeting attendees include representatives of the OAQPS Emission Standards Division, trade associations, and environmental interest groups. A complete list of attendees (with their affiliation) is included as attachment 1.

4.0 SUMMARY OF DISCUSSION

Meeting discussion generally followed the agenda provided as attachment 2. Discussions are summarized in the following sections:

4.1 Response to Coordinating Committee's Questions

At the July 22 meeting of the Coordinating Committee, representatives of the Process Heater Work Group presented emission test data and preliminary findings for gas-fired boilers and process heaters. The Coordinating Committee developed a list of questions for the Work Group to answer. The questions are included as attachment 3. A preliminary response to the questions was presented and discussed at the Process Heater Work Group meeting. The final response will be posted on the TTN.

Lee Gilmer presented the draft response to the Work Group. During the presentation, several questions were asked and many suggestions were made. Following is a summary of the discussion organized according to the question asked or suggestion made by the Coordinating Committee .

4.1.1 Data

The Coordinating Committee suggested that data be made open and publicly available and the details on test methods be provided. Lee Gilmer explained that all of the test reports and summaries will be given to EPA to be placed in the docket.

Karluss Thomas asked if any of the test data and summaries that will be placed in the docket are available electronically. Lee Gilmer explained that, because the reports and summaries were created using a variety of software programs, it would be difficult to provide them electronically and as of now, there are no plans to do so.

4.1.2 Representativeness of Data

The Coordinating Committee asked how representative the facilities tested are with respect to facilities in various geographical locations. Lee Gilmer explained that all of the facilities included in field tests are located in California but some of the fuel gas used in the

Petroleum Environmental Research Forum (PERF) study may have been from facilities outside of California.

Jim Seebold asked what the purpose of the question regarding the representativeness of the fuel gas is. John Ogle explained that he thought it was a question about whether the gas tested is representative of gas burned in other parts of the country with regard to trace constituents. Bill Maxwell stated that the question is about the hydrocarbon composition of the gas as well as trace constituents.

Mr. Maxwell asked if it is possible to state the gas burned in test facilities is representative of gas burned on the East Coast. Mr. Seebold stated that it is not yet possible to make that determination. Mr. Seebold stated that fuel gas is highly variable within geographic locations and that 19 fuel gas mixtures from five facilities were tested. Lee Gilmer suggested that it may be possible to compare analyses of fuels from across the country to demonstrate representativeness. Mr. Gilmer stated that, although crude oils used by refineries across the country vary by region, the hydrocarbon constituents in fuel gas are the same. Mr. Gilmer added that the hydrogen content in fuel gases may vary, but normally fuel gas has approximately the same heating value as natural gas.

Mr. Gilmer suggested reviewing the ICCR emission test database for test reports for process heaters in areas other than California so that emissions from these heaters could be compared to emission from heaters tested and discussed in the presentation. Bill Maxwell added that while there are not many reports in the database for process heaters, there may be reports for boilers burning refinery gas and additional reports may be available from New Jersey.
Janet Peargin suggested reviewing AP-42 for emission test data. Roy Carwile stated that AP-42 would not be useful for the Work Group's purposes because little information is provided about the quality of the fuel.

Lee Gilmer suggested that industry representatives obtain and review available fuel gas analyses. Mr. Gilmer also suggested that EPA determine if HAP emission test reports are available for process heaters in New Jersey. John Ogle suggested the Stanford report and Bob Morris suggested the 1990 HAP report as possible references for data on fuel gas composition and emissions.

4.1.3 HAP Constituents and Emissions

The Coordinating Committee asked the Work Group to identify and explain why certain HAPs were and were not examined and to identify organic and inorganic HAPs as fuel constituents and HAP emissions. The Coordinating Committee asked in there are HAP emission effects caused by the process equipment and control devices, if present, on indirect-fired process heaters.

Lee Gilmer explained that the HAPs tested for are those required to be tested for by the California Air Resources Board (CARB). Mr. Gilmer added that pollutants other than HAPs were tested for. Mr. Gilmer stated that commercial grade hydrocarbons do no contain chlorine which doesn't mean that some fuel gases do not contain chlorine.

Jane Williams provided that EPA recently released a list of 21 HAPs that are being tested for health effects. Norm Morrow explained that EPA has identified 75 HAPs for which inadequate health effects data are available and the list of HAPs mentioned by Ms. Williams are the first of these 75 for which testing will be conducted. Mr Morrow explained that EPA has not necessarily identified these HAPs as a greater concern than others. EPA has identified these HAPs as those for which health effects data are lacking. Ms. Williams suggested obtaining the list of Urban Air Toxics. Bill Maxwell stated that there are several lists of pollutants that the Work Group should obtain, including those being developed by other work groups. Mr. Maxwell suggested compiling and comparing the various lists available.

Lee Gilmer asked the Work Group for examples of HAP emission effects caused by process equipment and control devices. Oliver Stanley suggested metals from the refractory, Jane Williams suggested intake fans, Bruno Ferraro suggested dust from the road and chlorine from the atmosphere, and John Ogle suggested control devices with HAP-containing fluids as possible non-fuel sources of HAP emissions.

Lee Gilmer stated that the only control devices listed in the inventory database, other than those for NO_X control, are for particulate matter control. Bob Morris suggested that available literature can be used to determine the effects these control devices have on HAP emissions.

Regarding emissions due to process equipment, Jim Seebold stated that it can be assumed that whatever non-fuel sources of emissions that exist were represented in the field data presented at the Coordinating Committee meeting.

Atly Brasher stated that answers that Work Group members take for granted may not be as obvious to others. Mr. Brasher suggested providing rationales and backup data for conclusions and decisions made by the Work Group.

4.1.4 Trace Constituents

The Coordinating Committee suggested that the Work Group identify HAPs of interest resulting from input trace constituents such as chlorine and mercury.

Roy Carwile stated that it is easier, cheaper and more accurate to analyze fuel for chlorine content rather than testing emissions. Mr. Carwile suggested emissions could be estimated by assuming that 100 percent of the chlorine in fuel gas is emitted as dioxins. Mr. Carwile stated that stack testing would then only be used if the calculated emissions are significant.

Several meeting attendees stated that the estimated emissions would be much greater than actual emissions. Lawrence Otwell suggested developing a correlation between chlorine in fuel and emissions based on test data. Mr. Otwell suggested that a chlorine concentration could be determined, below which dioxin emissions are insignificant. Chuck Feerick pointed out that the temperature at which the unit is operating also has an effect on dioxin emissions. Bruno Ferraro added that residence time and the presence of certain metals are also important factors in dioxin formation. Roy Carwile stated that the temperature of the exhaust gas where constituents are available to form dioxin is also an important parameter.

Several meeting attendees stated concerns regarding the accuracy of dioxin test methods. Lawrence Otwell stated that breathing into sample containers and touching the apparatus has been found to give positive results for dioxin.

Norm Morrow asked what data are available for mercury and chlorine emissions from the combustion of natural gas. Bill Maxwell explained the Utility HAP Study addressed mercury emissions from pipeline natural gas, but not chlorine. Mr. Maxwell added that the only fuel tested to determine its mercury content is coal. Mr. Maxwell explained that the mercury content of natural gas may not have been quantified because no mercury was detected in emissions from

natural gas combustion. Bob Morris mentioned a report on natural gas emissions developed by the Gas Research Institute (GRI). Jim McCarthy of GRI provided the following two references for natural gas data: Characterization and Measurement of Natural Gas Trace Constituents: Natural Gas Summary (GRI-94/0243-2) and Gas-Fired Boiler and Turbine Air Toxic Summary Report (GRI-95/0200).

Reports may be ordered by faxing a request which includes the report name and number and the requesters mailing address to (630) 406-5995. Anyone with questions may contact Mr. McCarthy at (773) 399-8774 (fax) or (630) 406-5900 (phone).

John Ogle provided that the Hazardous Organics NESHAP (HON) includes a provision for halogenated process vents. Norm Morrow explained that the HON requires halogens in process vents to be removed to a certain level before combustion or a scrubber to be added to the combustion device. Mr. Morrow explained that the requirements of the HON are based on the maximum achievable control technology (MACT) for halogenated process vents. Because it is a technology-based standard, the HON was not developed based on dioxin or other pollutant health risks. Mr. Morrow and Mr. Ogle explained that the combustion device could be an incinerator, process heater, boiler or flare.

Bruno Ferraro presented the following limits for constituents of used oil, based on 40 CFR 279.11:

Pollutant	Maximum Concentration
Total Halogens	4,000 ppm
Arsenic	5 ppm
Cadmium	2 ppm
Chromium	2 ppm
Lead	100 ppm

Flash Point: 100°F minimum

Mr. Ferraro explained that the limits were back-calculated based on ground level concentrations. The objective was to set limits for waste oil so that when burned, it will not result in emissions greater than ground level concentrations. Mr. Ferraro added that many assumptions were made and practicality was taken into consideration in developing the limits. Lee Gilmer

stated that it would be useful to know how input concentrations were determined from output emissions.

Lee Gilmer pointed out the emissions from trace constituents are not a concern in setting the MACT floor, but are an issue in deciding to set a standard more stringent than the MACT floor. Lawrence Otwell suggested that fuel analyses can be used in deciding if there is a reason to set a standard above the floor. Jim Seebold suggested that the kinetics of jet mix burners should be studied to determine if it is possible for dioxins to form.

Bruno Ferraro stated that the Coordinating Committee's concern may be slip streams from process units that are burned in process heaters. Mr. Ferraro suggested providing a simple explanation of refinery processes at the next Coordinating Committee meeting. Mr. Ferraro also suggested dividing process heaters into three categories based on the fuel they burn: non-fossil fuel; pipeline natural gas; and refinery gas. Mr. Ferraro stated that the data from the PERF study applies to pipeline natural gas units, a point he believes was missed by the Coordinating Committee due to their concerns regarding refinery gas. Lee Gilmer stated that this approach may lead to the assumption that pipeline natural gas is clean and refinery gas is not. John Ogle agreed. Mr. Ferraro explained that he believes the Coordinating Committee currently regards natural gas and refinery gas differently and that this issue needs to be addressed.

The Work Group decided to form a subgroup to address the issue of trace constituents. Lee Gilmer suggested soliciting the Boiler Work Group's participation on the subgroup because the Boiler Work Group has an interest in this issue. The subgroup includes Lee Gilmer, Jim Seebold, Janet Peargin, John Ogle, Jane Williams, and Bill Maxwell. The Boiler Work Group co-chairs will be asked to identify one or more representatives from their work group. Lawrence Otwell provided that efforts should be coordinated with a subgroup the Coordinating Committee may be considering to address dioxins.

4.1.5 Format of Response to Coordinating Committee's Questions

The Work Group discussed several options for responding to the Coordinating Committee's questions and suggestions. Several Work Group members supported addressing the Coordinating Committee's concerns as soon as possible in order to resolve the outstanding issues. Work Group members agreed that some items could be addressed immediately while others will

require additional time and investigation. Jim Seebold suggested including a plan and a schedule for addressing any outstanding issues in the response. It was suggested that the response to the Coordinating Committee be posted to the TTN for their review well in advance of the September meeting so that any issues raised can be addressed prior to the meeting. Bruno Ferraro suggested adding an introductory paragraph soliciting comments from the Coordinating Committee on the draft document and stating the date by which comments are due.

Lee Gilmer agreed to add an introductory paragraph and suggestions from the meeting's discussion to the response and distribute it to Work Group members for review.

4.2 Database Review

John Ogle reported on the progress of the Chemical Manufacturers Association (CMA) in reviewing the ICCR inventory database. Mr. Ogle provided that CMA member companies were sent sections of the database to review. They have completed one round of reviews. A second round of reviews are due back to CMA in mid-August. CMA plans to provide EPA with the results of the second round of review by the end of August.

Mr. Ogle stated that, for the facilities and units in the database that he reviewed, he made any obvious corrections and indicated, if possible, if process heater is direct- or indirect- fired. Mr. Ogle stated that he found the database to be confusing and it was often difficult to determine the actual unit to which an entry in the database corresponds. Mr. Ogle stated that he does not believe that changes to the database resulting from this review will have a significant impact on the database.

Bill Maxwell clarified that revisions to the database are to be sent to him as hard copies or using the electronic format provided on the TTN (see file named "chngproc.zip" in the miscellaneous download area of the process heater board.)

Lee Gilmer and Hal Taback reported on the progress of the American Petroleum Institute (API). Mr. Gilmer explained that API plans to provide three tables: one of facilities assigned an incorrect Standard Industrial Classification (SIC); one of units for which the SIC and source classification code (SCC) do not match; and one of units that are misclassified. API also intends to provide EPA with results of their review by the end of August. Hal Taback added that they

have extracted from the database entries for facilities with SIC codes for the refining industry and searched the remaining entries for key words such as "refinery" to located misclassified facilities. Mr. Taback added that following the initial review, they may decide to review unit capacities or control devices for accuracy.

Roy Carwile reported on his review of the database for the primary metals, secondary metals, and metal fabrication industries. Mr. Carwile stated that it was difficult to produce results without duplicates. Mr. Carwile reported that, of the units in the 13 SCCs he reviewed, approximately 5 percent are boilers, turbines or incinerators, 10 percent are covered by another MACT standard, 30 percent are gas-fired space heaters, 40 percent are gas-fired, direct-fired units, 5 percent are indirect-fired units (excluding space heaters), and 10 percent do not have a description.

Lawrence Otwell reported that, due to the numerous ICCR Combustion Unit Surveys received by his company, he has not had time to review the database for the forest products industry.

Dave Smith reported that he has attempted to review the database but requires additional resources to do so. Mr. Smith estimated that there are 2000 grain terminals in the database and stated that the majority of these are likely to be dryers.

Bruno Ferraro reported that he provided Bill Maxwell with corrections and indications of direct- and indirect-fired units. Mr. Ferraro reported that he found many units that are not process heaters, such as burn-off ovens, in the miscellaneous section of the process heater database.

John Ogle suggested that if the work groups undertake another database review, standard database searches and instructions should be developed. Bill Maxwell encouraged Work Group members to complete the initial review of the database by the end of August. Mr. Maxwell requested that an indication of whether units are indirect- or direct-fired also be included with the results of the review. Mr. Maxwell instructed Work Group members to concentrate on process heaters previously identified as the current focus of the ICCR Process Heater Work Group. Mr. Maxwell mentioned that additional data have been received from Louisiana and that preliminary review of the Louisiana data will be conducted by EPA and ERG. Mr. Maxwell

reminded the Work Group that one purpose of the review is to determine if the database is representative and determine what data, if any, must be collected to augment the database. Mr. Maxwell requested that Work Group members think about whether the database is representative as they review it.

4.3 Combustion Unit Survey

Bruno Ferraro reported that he conducted an experiment with combustion unit surveys his company received to fill out for clients. Mr. Ferraro had staff members not familiar with the ICCR complete the forms and then reviewed their responses. Mr. Ferraro reported that the unit type (boiler, process heater, or incinerator) was often indicated incorrectly. Mr. Ferraro stated that although his staff read the instructions that include a definition for each of the unit types, they often indicated the wrong type based on how the unit is classified by the facility or the State.

Lawrence Otwell reported that he instructed representatives of his company to ignore the part of the definition for co-fired fuel that defines it as providing greater than 15 percent of the heat input to the unit. Mr. Otwell explained that because many wood fuels, such as sanderdust and trim, are burned at the same time, their heat input is less than 15 percent. However, they are not added to the fuel mix to meet heat input demand. Mr. Otwell explained that surveys completed for his company may indicate that a fuel that makes up less than 15 percent of heat input is co-fired. Mr. Otwell indicated that a note of explanation is included with the survey in this case.

4.4 Halogenated Versus Non-Halogenated Fuels

Lee Gilmer asked for input from the Work Group on addressing halogenated and non-halogenated fuels separately. Bill Maxwell and Roy Carwile pointed out that it will be necessary to define "halogenated." John Ogle stated that "halogenated" does not mean the same as having trace amounts of halogens. Mr. Ogle explained that halogenated streams are associated with processes using hydrocarbons and chlorine and will likely have a control device. Bob Morris provided that the Incinerator Work Group separated non-halogenated streams from all others because of different technologies in use. Mr. Morris explained that there are no control devices

on flares because they are control devices. Lee Gilmer pointed out the feed pre-treatment is a control technology. Mr. Gilmer stated that because halogenated gas streams have controls to control chlorine content, they must be a separate category.

Jane Williams suggested that a subgroup be formed to determine the questions that need to be addressed if halogenated and non-halogenated fuels are to be addressed separately. Bill Maxwell pointed out that the subgroup formed to address trace constituents may also address this issue. John Ogle suggested that it would be helpful to contact equipment manufacturers for their input on this issue. Bruno Ferraro pointed out that John Bloomer, a member of the Work Group, represents an equipment manufacturer.

4.5 Metals

Lee Gilmer mentioned that Fred Porter has expressed the opinion that constituents in fuel, such as metals other than mercury, that are not affected by combustion may not be a concern of the ICCR. John Ogle agreed that constituents that are dependent on a process should be addressed with the process, not with the combustion unit. Mr. Ogle stated that the Work Group can not ignore these emissions and compared them to emissions from direct-fired process heaters which he stated should be controlled as part of the process. Bob Morris agreed that such constituents are a source issue, not a combustion issue. Mr. Morris but pointed out that how such constituents should be addressed if not covered in another MACT was not mentioned.
Mr. Morris stated that even if another MACT addresses a process, trace metals may not have been addressed. Lawrence Otwell stated that he understood EPA's position to be that if a MACT did not address certain pollutants, such as trace metals or emissions from direct-fired heaters, the MACT would be revisited. Jane Williams stated that requiring industries to go through MACT development multiple times is burdensome. Lee Gilmer and John Ogle stated that additional guidance from EPA is required on this issue.

4.6 Non-Gas-Fired Process Heaters

Bill Maxwell solicited suggestions from the Work Group for obtaining additional information on emissions from non-gas-fired process heaters. Mr. Maxwell stated that

information is needed to develop model plants and test plans. Jim Seebold suggested conducting a literature search for information and mentioned a paper by Andy Miller. Mr. Seebold also mentioned digests of papers presented at a conference in Lisbon on emissions from oil, pulverized coal and wool products.

Several Work Group members suggested coordinating efforts with the Boiler Work Group.

Mary Lalley provided that an Access table of SCCs will be posted to the TTN. The table provides a fuel type (gas, oil, wood, etc.) for each SCC in the process heater database except for those SCCs with descriptions that do not include an indication of the fuel type. Ms. Lalley suggested that this table can be used with the database to determine the number and types of non-gas-fired process heaters in the database.

Jim Ogle asked if representatives of refineries can find out where the fuel oil they produce is consumed in order to locate additional non-gas-fired process heaters.

Bruno Ferraro stated that his concern is not the common fuels, such as oil and wood, but less common liquid fuels that may be specific to a single industry. John Ogle pointed out that liquid may be a waste issue.

4.7 Tracking and Schedule

Jane Williams suggested developing a schematic of major issues that need to be addressed to help track the progress of the Work Group. John Ogle explained that Lee Gilmer did produce a time line which must be updated by the Work Group. Mr. Gilmer noted that action items are included in the meeting minutes. Ms. Williams suggested that in addition to action items, the questions that they answered should be recorded. Mr. Gilmer suggested that a list of issues and corresponding actions and completion dates be recorded. Bob Morris suggested including a reference to documents or presentations used to answer questions in a comment section. Mr. Gilmer proposed merging the tracking of issues and action items with the time line, which already includes milestones. Ms. Williams suggested that a tracking chart or table will help Coordinating Committee members understand the activities of the Work Group. Bill Maxwell

pointed out that the information recorded may be the same as the information to be requested by the Coordinating Committee Tracking Subgroup and for the status report.

Bill Maxwell estimated that the Work Group is on schedule for gas-fired units. Roy Carwile proposed that multiple time lines will be required to track the various categories of process heaters. Lee Gilmer stated the regulatory development for all categories should be completed at the same time. Bob Morris stated that development will progress faster for categories addressed in the future because a process will already be developed.

5.0 ACTION ITEMS

- Lee Gilmer will modify the draft response to the Coordinating Committee's questions and e-mail it to Work Group members for review. Work Group members will provide comments on the response to Lee Gilmer by August 4.

- John Ogle and Karluss Thomas will summarize the HON requirements for halogenated process vents.

- EPA will contact representatives of New Jersey to obtain additional test reports for combustion devices and API will gather currently available fuel analyses and emission test data to address the Coordinating Committee's concern regarding the representativeness of the test data presented for gas-fired units.

- Mary Lalley will develop a chart or table for tracking issues, action items and milestones.

- Lee Gilmer will coordinate a meeting of the subgroup formed to address the Coordinating Committee's request to identify HAPS of interest resulting from input trace constituents.

- Bill Maxwell will initiate a literature search for information on non-gas-fired combustion devices. Efforts will be coordinated with the Boiler Work Group.

6.0 NEXT MEETING

- A meeting of the Trace Constituents Subgroup will be coordinated by Lee Gilmer.

- The Work Group plans to meet in person or by conference call prior to the September Coordinating Committee meeting. The date, time and location are to be determined.

- Additional meetings are scheduled for September 18 in Durham, NC and November 20 in Houston, TX.

These minutes represent an accurate description of matters discussed and conclusions reached and include a copy of all reports received, issued, or approved at the July 24, 1997, meeting of the Process Heater Work Group. Bill Maxwell, EPA.

Attachment 1

MEETING ATTENDEES

Atly Brasher, Louisiana Department of Environmental Quality (LDEQ), Air Quality Regulatory Division
Roy Carwile, Aluminum Company of America
Chuck Feerick, Exxon Company, USA
Bruno Ferraro, Grove Scientific Company
Lee Gilmer, Texaco, Inc.
Terry Harrison, EPA, Office of Air Quality Planning and Standards
Greg Johnson, Shell Oil Company
Mary Lalley, Eastern Research Group
Bill Maxwell, EPA, Office of Air Quality Planning and Standards
Jim McCarthy, Gas Research Institute
Tom McGrath, EER
Robert Morris, The Coastal Corporation
Norm Morrow, Exxon Chemical Americas
John Ogle, Dow Chemical Company
Lawrence Otwell, Georgia-Pacific Corporation
Janet Peargin, Chevron Corporation
David Schanbacher, Office of Air Quality, Texas Natural Resource Conservation Commission (TNRCC)
Jim Seebold, Chevron Research and Technology Company
Dave Smith, Central Soya Company, Inc.
Oliver Stanley, Cargill
Hal Taback, Hal Taback Company
Karluss Thomas, Chemical Manufacturers Association
Gideon Varga, U.S. Department of Energy
Jane Williams, California Communities Against Toxics

Attachment 2

AGENDA
ICCR PROCESS HEATERS WORK GROUP

JULY 24, 1997
The Renaissance Long Beach Hotel
111 East Ocean Boulevard, Long Beach, California

When	What	Who	Outcome
8:00 - 8:15	Open	Bill Maxwell	
8:15 - 10:15	Feedback from/response to CC meeting/PERF presentation	Lee Gilmer	Work group members review PERF White Paper, CC discussion, issues, and any direction given; discuss next steps, including resolution of dioxin issue
10:15 - 10:30	Break		
10:30 - 11:30	Discussion of inventory database changes	All	Work group members go through evaluations of database performed by individuals on their subsections following guidance given by CC
11:30 - 12:30	Lunch		
12:30 - 2:00	Continuation of database discussion	All	
2:00 - 2:45	Non-gaseous process heaters and other industries' process heaters	All	Work group continue discussion on how to best acquire information on non-gaseous fueled process heaters and process heaters in industries not represented on WG
2:45 - 3:15	Discussion of emission data base	All	Work group members discuss initial information from emission data base
3:15 - 3:30	Break		
3:30 - 3:45	Discussion of time line	Lee Gilmer	Work group review time line and evaluate status re schedule

3:45 - 4:00	September CC meeting--do we have anything? Agenda for Next Meeting; Next Steps	Bill Maxwell	Work group discuss any items for presentation to CC at September meeting; Work group discuss potential items for next WG meeting, dates of next meeting(s), etc.
4:00	Adjourn	Bill Maxwell	

Attachment 3

ICCR
Coordinating Committee Guidance To
Process Heaters Workgroup
July 23, 1997

1) Data
   - Make data open & publicly available
   - Provide detail on test methods so their adequacy can be assessed

2) How representative were the facilities tested (e.g., West, Midwest, East)?

3) Identify and explain why certain HAPs were and were not examined? Identify organic and inorganic HAPs as fuel constituents and HAP emissions. Are there HAP emission effects caused by the process equipment and control devices, if present, on indirect-fired process heaters?

4) Identify the HAPs of interest resulting from input trace constituents such as chlorine and mercury.